

Final Exam Planner

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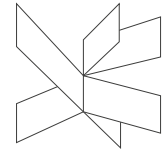
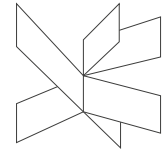


Table of content

Preface	Error! Bookmark not defined.
1 Introduction.....	1
2 Group Description	2
3 Project Initiation	4
4 Project Description	5
5 Project Execution	6
6 Personal Reflections	7
7 Supervision.....	13
8 Conclusions	14

Appendices



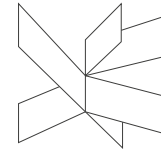
1 Introduction

According to the Bruce Tuckman's Team Stages Model, there is 4 stages that every group project goes through: Forming, Storming, Norming and Performing. In our specific case, this is true, but we have not experienced the Storming stage in a dramatic way.

We have had a total of 150 hours (approximately) of group meetings. This has allowed us to know more about each other as the semester was going on.

Another great source of help had been the SSE and SEP1 classes. We have had about 130 hours (approximately) of SSE classes and work, which were really helpful when it comes to personal development and group work. The number of hours spent on SEP1 classes and projects had been about 140 (approximately), which was really useful for keeping track of how our project was doing and also to meet the deadlines.

Finally, the meetings with the Supervisors, who have helped us with doubts about the development of some parts of the project and details that we were missing. Taking into account the in-person meetings and e-mails, we have had 2 hours (approximately) with the supervisor a



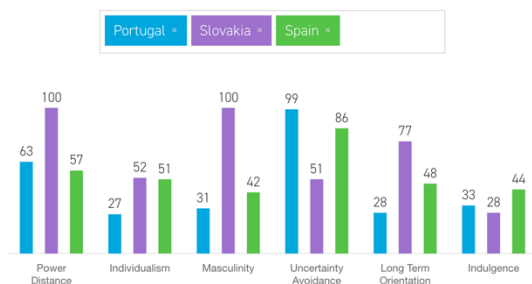
2 Group Description

During the SSE sessions we had the opportunity to do E-Stimate Personal Profile tests so that we could have an insight of the skills that each person of the group has. The results are as follow:

- **Lenka** – predominant green, followed by yellow and no red and blue.
- **Bernardo** – Almost perfect balance between yellow and red, with no green at all, and slightly more blue than green.
- **Jan** – Mainly red and yellow, with half blue and no green at all.
- **Juan** – predominant red, followed by blue, slightly less green, and less yellow.

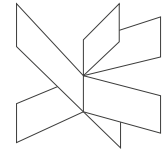
As we can infer from this data, the group is really compensated. We have a goal-oriented culture where there are no stablished roles. No one had the status of leader, but everybody in the group showed leadership skills at some point during the project.

Since specially Jan and Bernardo had more experience with projects than Juan and Lenka, they were the ones that pushed more the technical part of the system, while Juan was more detail-oriented and Lenka was the anchor of the group when it came to communication and discussions.

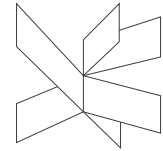


Although we come from 3 different countries, with distinct cultures, everybody shares a lot of personalities traits. Even though the Hofstede model separates each dimension by countries, we do not feel it this way. Our group could be described as it follows:

- Indulgence. We are a constraint society, so we do not put much emphasis on leisure time and control gratification of out desires.
- High power distance. We accept a hierarchical distance, admitting that the ones who hold powerful positions have privileges.
- Individualism. Our group does not really have a clear preference towards individualism or collectivism, it is in the middle of this dimension.
- Long term oriented.



- Masculine. We go more towards a masculine society, since we are very driven and competitive, we want to be the best, but we also do it because we like it.
- Uncertainty Avoidance.



3 Project Initiation

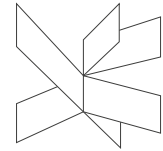
The project is built around the necessities of the customer. In order to solve his problems planning exams, we decided to create a more efficient, but simpler exam planner.

To carry out this project we decided to have a 4-people group, which was formed taking into account the personalities that each member of the group has. Since we all knew each other a little on a personal level, it was easy to state that all together would fit perfectly in a group.

In order to plan everything, we have used a variety of tools, depending on the nature of the matter:

- To work together in the code part, we used Github.
- To share documents, we used Google Drive and Outlook
- To communicate we have done it through in-person meetings and a Facebook Messenger group.

Using all these tools have led us to a very successful position, since we have met the deadlines for every part of the project. We have not experienced any kind of hurry when delivering each part of the project. All thanks to the workflow that we have created.

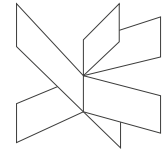


4 Project Description

The way we defined the problem was by first, stating a main problem, which was the lack of efficiency in his workflow (the current system). After this, we came up with 6 different sub-problems that made the new system less prone to human errors and better both for the client (administrator) and the user (students).

Since the system that we built has more functionalities than the system that the client requested, the goals set for this project were really high, but realistic at the same time. We only left out of the project third-party actions, like calling the service department and the insertion of the information about students, classrooms, examiners, etc.

In order to finish the project successfully we had to be very clear about what we wanted to achieve with our system. Our purpose was to make the administrator's job easier and faster, thus enhancing his efficiency.



5 Project Execution

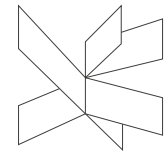
We were using a Waterfall method, which was divided into several parts.

In this project, we mostly focused on analysis part, where all the features and models are described. We discussed how our system would work and we applied requirements from the customer. We moved on design part where we made a layout and implement it to the project. Eventually, after implementing the code, we tested our system and improved little issues.

In our project description, we have made a risk assessment with all possible errors which could occur. We were expecting issues with software due to overloading of information. We focused on separating the information into several classes to prevent possible defects.

We manage to filter available classrooms, which was also one of our risks. Additionally, there can be an information which is written incorrectly, that's why we added an option to edit information.

We came to an issue with connecting data between two different systems which are using various principles.



6 Personal Reflections

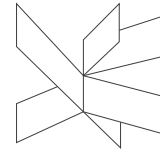
LENKA - In our group contract we agreed on participating in each project which was successfully met. As our personalities are mostly communicative, we were able to discuss every issue and decide on final step. We also manage to finish our projects on time. In my opinion, we followed our group contract, which had positive impact on working in group. We could easily solve any problem and make common decision.

According to the management philosophy by Douglas McGregor, all members from our group belong to Y group, which means that we were creative and strive to achieve our system. Our group work was very intense and effective. We all delivered our maximum, because we wanted to improve our skills and be satisfied with the result.

For me, the most significant motivation was to gain new knowledge and finish our project with satisfaction. In my opinion, we all were motivated by observing the progress of our project. What made me demotivated, was little issues we faced, but by working in group, we could handle it together.

Following Hofstede's model of national culture, we might come to a difference among the cultures. Although, I was trying to understand everyone's point of view, which prevented me from arguing with others. As everyone had different idea of the final system, the biggest challenge for me was to find out how it would work. This understanding is important to me, because I'm aware of fact that I will work with different people in various situation.

What I'm going to change in my future work group, is participating equally in every part of project, not in particular ones. For me, the biggest advantage of group work is that we can tolerate each other and observe others' personalities in various situation. If there is any issue I can't handle, we all can discuss it and find solution by analyzing the process. The disadvantage can be working with people who are not used to work in groups. For instance, it may be harder for person with green personality like me, to



cooperate with person with red personality. Our goals are different, and we can come to a little argument about process. However, if this happens, we can always follow our group contract and communicate.

JUAN – The basis of our group were written in a document called the group contract. Here we stated different issues that can come up during a project group. In order to avoid conflicts we made clear how we would conduct, participate, communicate and when we would meet.

For every part of the project we broke it down into small pieces so everybody could participate equally on each task. Personally, I think this is a great way to manage the project for the first semester, since we are not experienced yet, and most of the people are not familiarized with an engineering project, not only the technical part but the documentation part.

Regarding the group contract, although we have done it in a way that matches our work culture, everybody within the group has been serious enough not to have considered the group contract.

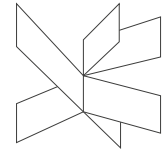
Another thing to note about the group contract is that everybody was flexible about it. In the group contract we stated when we would meet, but some weeks there were people that had to work, so we decided to re-schedule our meetings during those days.

The group was able to work together successfully, since we did not have any major problems neither with decision-making process, which was done by giving our opinion and choosing the one that most wanted, nor with project work, because everybody delivered a great job.

The group was really motivated with the project, since it was our first engineering project based on an actual product that can be used in the real world. I never felt like the group was demotivated, some days it was harder to work, but that was due to the workload during the semester.

Working in a multicultural environment is a really interesting experience to live. I have learned that the background culture has to be taken into account, and that empathy is a really important trait in work projects. This has made me more aware that social skills are also very important for an engineer.

With that said, I have a lot of room to improve, especially when it comes to communication and organization methods. I realized that a good project management method is very important if you want to keep every member of the group on track of the project situation.



A good improvement for the next group project would be to have a work methodology clear from the beginning.

Problem-based learning and group project have a lot of advantages, especially when you combine them together. They make you develop into a good professional, because you encounter situations that otherwise you would never face, like understanding how people may act based on their fixed cultural beliefs.

On the other side, a disadvantage of problem-based learning and group work is that you have to be open minded about the situations that may come up. Also, you need a lot of patience and persistence in order to react to the problems, and find a good solution for them.

Overall, I consider that the group work has been really positive for me. I am more aware now about what a good engineer should be able to do, and what problems will I face in the future.

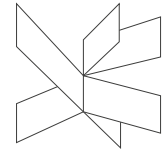
JOAO – The group contract defined very abstract rules that helped the group work well without leaving the members frustrated or revolted in any situation.

I think we all felt equally responsible for the project, we divided the workload into more or less equal parts this way giving everyone the same level of responsibility, for example when we were coding the website each of us made two of the eight pages we needed and one of us took care of the navigation bar, this ensured that none of us had too much work and as soon as we finished our part we could help the others who were having bugs.

Following the group, the contract ensured that we went to every meeting and talked freely about our views regarding the project this way making the whole process much simple and ensuring that we worked on par at every step of the project. I think the group contract worked perfectly and I would not suggest any adjustments.

In my opinion, the group worked perfectly, we all had different skills and personalities which complemented each other, this ensured that we didn't have any problems and that everyone contributed. Each member worked hard to utilize his expertise but also, we tried to work on the areas that we did not understand well, this way gaining new skills.

I think that since all of the group liked to hang out together, we enjoyed working on the project this way keeping all of the group motivated. I think Juan (Spanish) and I

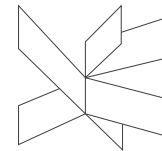


(Portuguese) we wanted to have input and communicate regarding the project whereas Lenka and Jano (Slovaks) tried to solve the problems by themselves, this being, in my opinion, the only challenge of working in our multicultural group. I learned that my ability to cooperate correlates directly to how much the group can freely communicate. I think I will follow most of the steps I had to follow with this group because based on what I was told our group worked relatively well.

Working in a group and problem-based learning has allowed us to prepare ourselves for the real world where engineers need to solve problems quickly and in a group not alone and by reading books which is how most school systems work in the world. The pros of problem formulation are that it makes the whole implementation process much simple this way reducing time wasted and the amount of bugs that can appear, the con is that if a member of the group does not master the language being used to write the problem formulation it can be confusing for that member and the other ones. The pro of project description is that it makes it easier for other people to understand the whole process the con is that it takes a lot of time and it is not useful for simple projects.

JAN - The main purpose of the group contract is to establish ground rules in the group. Those rules are important because they contribute to better communication, work efficiency and prevention of conflicts between the members of the group. Personally, I think the contract established a work environment where every member of the group knew what they should and shouldn't do. For example, each member of the group know that it is mandatory to come to every meeting on time or to contribute to the group project in a way that other members did not have to work harder than others. The group contract was a meaningful agreement and I think it is a key element of a group that wants to work efficiently.

I felt that the responsibly of the group was split among all the members like in democracy. Everyone felt the responsibility for the whole project, so we did not have to remind anyone to start working harder or take it more responsibly. We ensured this by dividing the work. For example, Bernardo and I focused on the coding while Lenka and Juan worked on the documentation. When the coding was ready for testing there were still missing some parts of the documentation, so we got assigned some work as well. I



think that proper distribution of work is important because every member knows what they are responsible for.

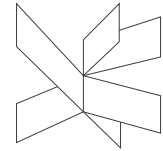
The group contract was never referenced or used to prove a point in a discussion, however every member knew the rules. And all the members acted accordingly to them. It probably prevented some possible disagreements and made us realize the importance of the project.

A possible addition to the rules might be to better divide the roles of the group. It would be better to specify which group member should have the role of dividing the work, to schedule the meetings or supervise the group. In our case everybody was doing everything, so it sometimes took longer when we had to discuss everything in a group communication.

The group worked very well together. Our team was made of very different personalities, but I think with proper open communication as we had in our group we managed it very well. Our different personalities enabled us to see the problems from different angles and make creative ideas. The main reason why we were so successful in communicating was because we used to hang out together a lot. We were able to discover and learn about other's personal traits outside of the work environment so when we started to work together, we knew each other quite well. I learned that knowing your co-workers and their personality is very important for good collaboration. I think all of us gave our maximum to the project and we used our specific characteristic expertise. Some of us were better at coding other at communication and managing of the group.

The main motivation of the group were our relations between each other. If you are in a good team you can have both fun and get the work done. The feeling of well-done job is something that motivates people a lot. That is why it is important to appreciate other people's work and give them compliments if they have done something well.

I have not really experienced any multicultural difficulties. The only one that comes to my mind is the language. English is not a native language to any of us so sometimes we got stuck on explaining some words. The benefits, of multiculturalism in group is that it is interesting getting to know other people.



I think I have learned to trust people more. I used to mainly rely on my own abilities and think that I can do everything better on my own. Now I know if we connect all our brains and ideas, we can finish the project with better results and in a shorter time.

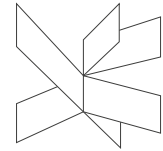
I would like to be able to learn how to better listen to other members of the group and be able to distribute the work so that everybody works on what they are best at.

Cooperating and working as an individual is a very different thing. When working with other people you must be able to present your ideas and explain them so that others understand them properly. I find it very important to learn skill related to communication and cooperation because that is how it work in the industry. Problem based learning is focused on preparing student better for their jobs by applicating the theory right into practice.

Group work sometimes slows down the progress of an individual in a specific field. For me I sometimes needed to wait for other people to understands some concepts that was already familiar with and instead I could learn something new.

Problem formulation helps to better understand the whole situation and the environment the problem is based in. It prevents confection and builds a solid foundation on which people can start building the solution.

It really helps the project when there are more people working on it. It separates the project into multiple logical steps and areas. If the project description is written right, then it is easy to divide the work and later, to easily connect It together. It really helps to make the project more presentable. On the other hand, it makes the project work take little longer. In smaller project, as the one we worked on some of the parts were not really helpful but only made it harder for the project to progress.

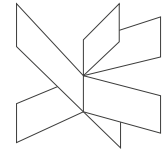


7 Supervision

As mentioned before, our project is divided into small parts, appendices, which are describing specific process of working. First part was project description, where we explained our ideas how the system would work. We received first feedback which moved us to the right direction. Some errors were improved, and we were able to find better words for describing. Our cooperation with the supervisors was very helpful, because we could see the progress of our project. In our next documentation, we managed to avoid doing similar mistakes and we could focus on other details.

We had a small issue with timing, which affected our meeting with supervisors. Although, we were present on SEP classes, where we applied our knowledge from SSE classes. The SSE classes gave us useful discussions about how to stay motivated or how to face possible arguments within the group.

We used the advice of supervisor when we were not sure about next step or requirements from customer. We presented a brief overview of our ideas to a customer, who told us what needs to be changed. We consider feedbacks to be very useful and helpful for us and we think that cooperation between students and supervisors is also very important.



8 Conclusions

In the conclusion of this project, we can say that we worked hard and efficiently. From the beginning, we could see bigger differences and bigger issues in working with others, as we did not know each other. We all came from different background and we all behave differently. After writing our group contract, we agreed on meetings and basic rules. Every member was thrived to achieve the same goal, with similar way. As we described above, the group contract was a key to be successful in communicating among the group. We think that this step is very important to create before starting the project.

Meetings with our supervisors had also a huge impact on our project, because we followed instruction and advice given to us. Receiving a feedback is always helpful, as we know if we are going the right direction.

We also liked the division of tasks, everyone was participating equally. Responsibility is very important in terms of working in the group. We think, that we all gain new knowledge and toleration towards people from different cultures or with different personalities.

At the end, we came to a fact that the documents were easier to do after we do the practical part, which was coding. According to this, we would change our starting point and we would change our schedule. However, we consider the documentation part very important also for our future project.